

Solve Data Storage Dilemmas for Remote Locations with SUSE and Micro Focus

Support Data Growth across Offices and Sites

Providing IT services for branch offices or other locations can be challenging, particularly when large distances are involved. To compound the difficulty, data volumes are growing rapidly. In fact, as terabyte upon terabyte stacks up, data storage is becoming a challenge everywhere.

Traditional proprietary storage solutions just weren't built to handle today's volume, nor can they efficiently store data of different sources and types, from unstructured files to block and object stores. The problem is even more acute at organizations' secondary locations, branch offices and retail outlets.

That's why many organizations are turning to software-defined storage (SDS). SDS delivers all the storage services you need via software running on an industry-standard hardware platform. Combine an SDS cluster with an efficient backup and disaster recovery solution, and you have a way to back up data at secondary offices or easily send data from remote locations to centralized and unlimited storage.

Whether you're trying to provide storage for locations without IT infrastructure or need to back up data for compliance or disaster

recovery issues, SUSE® Enterprise Storage and Micro Focus Data Protector provide unlimited, compliance-ready storage that can easily support your plans.

SUSE Enterprise Storage is powered by Ceph, an industry-leading SDS solution and the most popular one among OpenStack users. It is designed as a distributed storage cluster to provide unlimited scalability from tens of terabytes to petabytes.

Micro Focus Data Protector is a single solution that can administer backup, restore and disaster recovery processes across hybrid IT environments. This enterprise-grade solution is built on an adaptive architecture that combines security and analytics to help you meet your continuity needs reliably and cost-effectively.

Centralized Storage and Management

When building a storage system that will support remote locations or outlets, you need to ensure that the system can scale easily so that opening a new office doesn't create issues in your main data center. Whether you plan to install the storage at the secondary location or in a centralized data center, keeping your IT burden low is vital. You don't want to staff every office with a large IT team or lose the efficiency of having a centralized team.

Easy to Manage

When maintaining storage for multiple locations, managing service-level agreements (SLAs) becomes a serious consideration. Data Protector can predictively track SLAs, making it much easier for your IT team to ensure SLA adherence.

“As SUSE Enterprise Storage is self-healing, if one component fails, another will take over automatically. ... This is an especially useful advantage for us as our client's data center is located many miles away from our head offices, and it takes several hours for us to travel there.”

MARK HERRUER

Founder and CEO

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For its part, SUSE Enterprise Storage is self-managing and self-healing, meaning it can automatically rebalance data without manual intervention. This means an issue such as a disk failure doesn't require immediate human attention.

Most importantly, the efficiency of an SDS cluster means that a single system administrator can easily manage up to 4 PB of data, much more than administrators in equivalent block-storage environments. That means a small team can manage storage for all your offices, no matter how much storage that is.

Scalable

Frankly, it's likely to be a lot of storage. Luckily, that isn't an issue for the Data Protector and SUSE Enterprise Storage solution, which has no limits on its ability to scale. Simply add hardware and the cluster rebalances, enabling you to grow along with your data.

You can build that cluster out of industry-standard server hardware, making scaling easy on your budget as well. Adding server capacity to the cluster also boosts performance and reduces bottlenecks, making it easy to increase throughput (terabytes per hour).

Backup and Disaster Recovery for Offices Anywhere

Even if your secondary offices or locations have their own IT infrastructure, you still likely need to back up the data or make copies of it for various reasons—an increasingly important one is compliance. Data Protector and SUSE Enterprise Storage can help you store additional copies in different locations to meet various compliance requirements.

Data Protector offers automated retention and replication management across different backup media, storage tiers and locations for compliance and efficient long-term data retention. For instance, you can share data between deduplication stores

SUSE Enterprise Storage is priced by node rather than by capacity, so you can scale your storage without per-gigabyte software pricing weighing you down.

created on storage appliances and those created on SUSE Enterprise Storage. This enables remote sites to keep a local copy of the backup while also sending a copy to the central or disaster recovery sites. A local copy of the deduplicated backup data enables a faster restore of files.

The Cost-Effective Way to Tackle Today's Storage Demands

Regardless of whether you use the SUSE and Micro Focus solution as the sole storage for remote sites or as part of a disaster recovery or compliance system, you won't be successful in your goals unless you can do so cost-effectively.

The ability to use standard server hardware is just one way the solution helps you control costs. In most scenarios, Data Protector requires a smaller footprint than competitors. Combine that with the unique per-node pricing from SUSE and you have an overall solution that is an extremely cost-effective way to handle lots of storage.

Per-node pricing means you can scale your storage without per-gigabyte software pricing weighing you down. In fact, in a [five-year total cost of ownership study](#), IT Brand Pulse found that SUSE Enterprise Storage outperformed every one of the competitors.

SUSE Enterprise Storage also enables you to deploy a unified block, object and file storage environment to reduce the capital and operational costs of storage infrastructure.

How It Works

Let's look at how the two pieces of the solution work in more detail.

SUSE Enterprise Storage

A SUSE Enterprise Storage cluster appears to Data Protector as a single storage target, but behind the scenes, multiple nodes work together to provide a resilient and easily scalable storage solution.

The cluster is made up of four types of nodes. The minimum SUSE Enterprise Storage cluster consists of at least one administration server (physical or virtual), four object storage device (OSD) nodes, three monitor nodes and one or more gateway nodes.

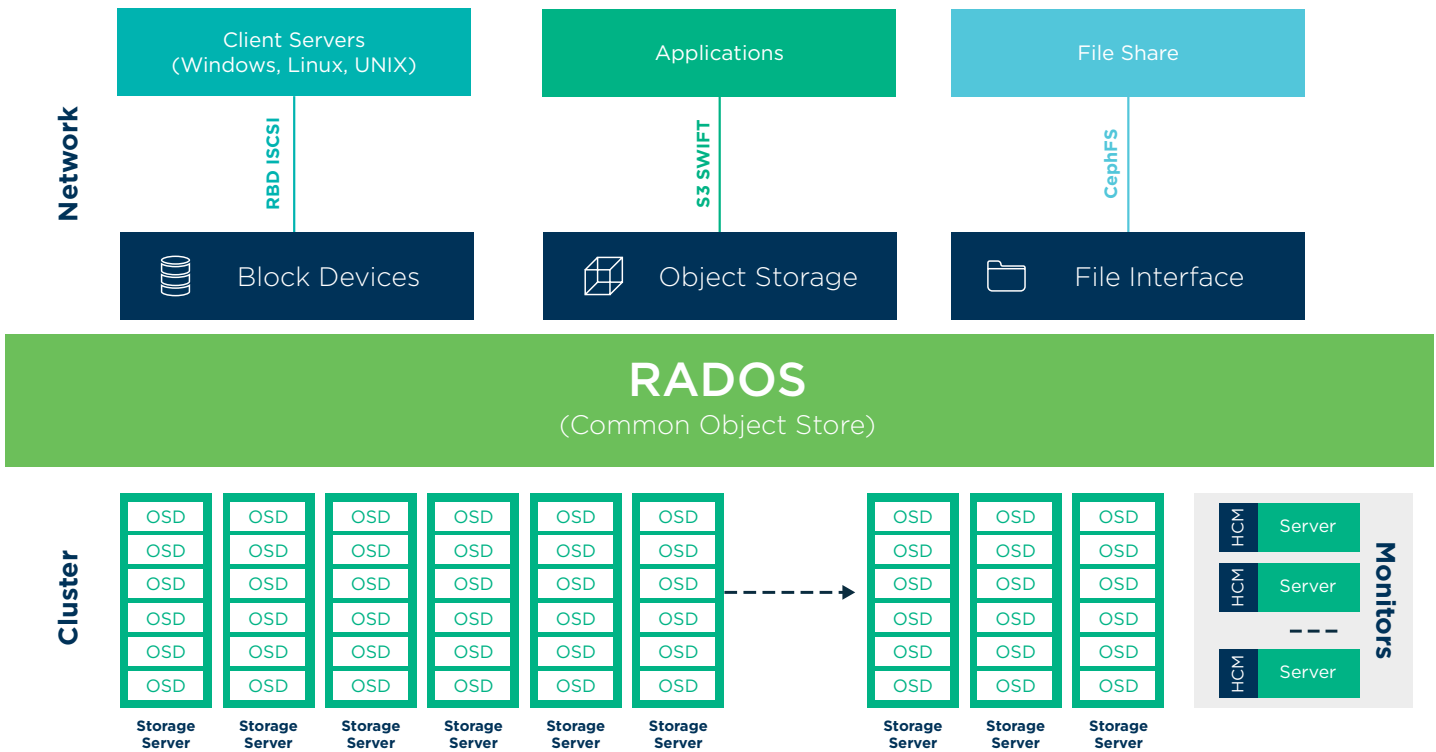


Figure 1. A logical diagram of the various kinds of SUSE Enterprise Storage nodes and the ways they interact with the rest of your environment.

Object storage device nodes are the workhorses of the cluster and do the actual data storage. SUSE recommends a minimum of four OSD nodes for each SUSE Enterprise Storage cluster.

Monitor nodes maintain information about cluster health, a map of other monitoring nodes and an overall map of the cluster. Monitor nodes also keep a history of changes made to the cluster. SUSE recommends a minimum of three monitor nodes.

Whether you're a retail organization with hundreds of outlets or an enterprise with a large secondary location, SUSE and Micro Focus can help you provide cost-effective and infinitely scalable storage that can meet compliance challenges and leave you free to grow.

Gateway nodes translate between your backup server and the SUSE Enterprise Storage cluster. If you have two different backup servers or archive applications (one using object storage and one using block storage), you will need two gateway nodes.

- For object storage (such as S3 and Swift), use a Ceph RADOS Gateway.
- For block storage, SUSE uses iSCSI gateways that enable block and multipathing storage to heterogeneous clients such as Windows and VMware vSphere.
- For file storage, use either Ceph File System (Ceph FS) or NFS-Ganesha.

Admin nodes enable you to make changes to your Ceph cluster. They have the smallest requirements of any of the nodes and can be run as a virtual machine or on repurposed existing hardware, if desired.

You can deploy SUSE Enterprise Storage using DeepSea and Salt. Guidelines are available in the [SUSE Enterprise Storage documentation](#).

Micro Focus Data Protector

Micro Focus Data Protector offers a number of features that help you back up and manage data storage with efficiency and security. Chief among them is application-consistent recovery, in which business application integrations enable you to protect applications with backup, automated point-in-time recovery and granular restores. This can help you return an application to its previous state after an issue has occurred.

The solution offers centralized, bare-metal recovery from physical to physical, physical to virtual, virtual to virtual and virtual to physical from any backup set—at no additional cost. Hypervisor integrations and support offer virtual machine protection inheritance and tiered recovery options for virtual environments.

Data Protector also gives you predictive analytics, automation and orchestration to help backup administrators efficiently manage the backup environment with key performance indicators, advanced monitoring and reporting and more.

Data Protector can be set up to send data directly from application servers to SUSE Enterprise Storage or to work with a storage appliance as a primary tier, as Figures 2 and 3 illustrate.

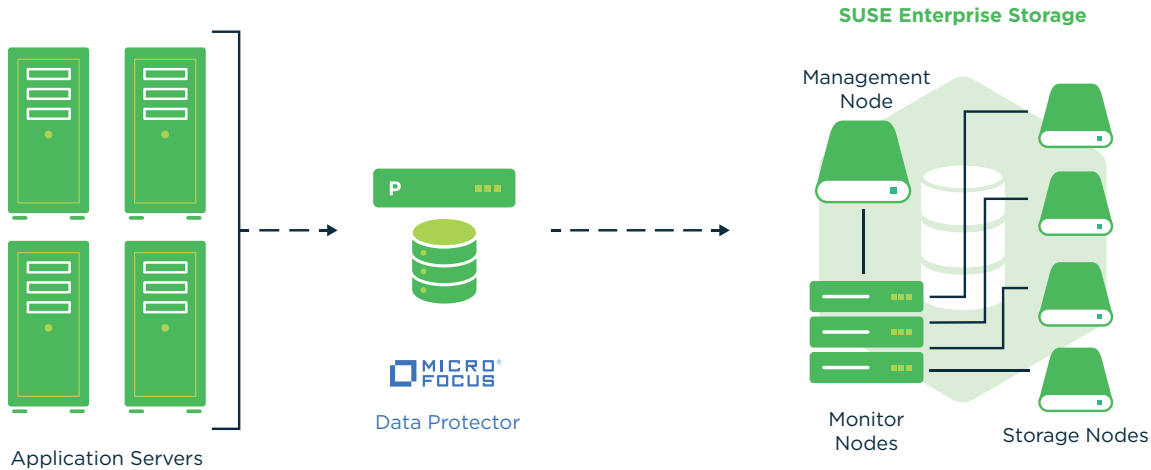


Figure 2. In this image, Data Protector sends data directly to SUSE Enterprise Storage, which could be located at a different site from the application servers. A remote office scenario where the remote office hosts the application servers but the storage is in a centralized data center might look like this.

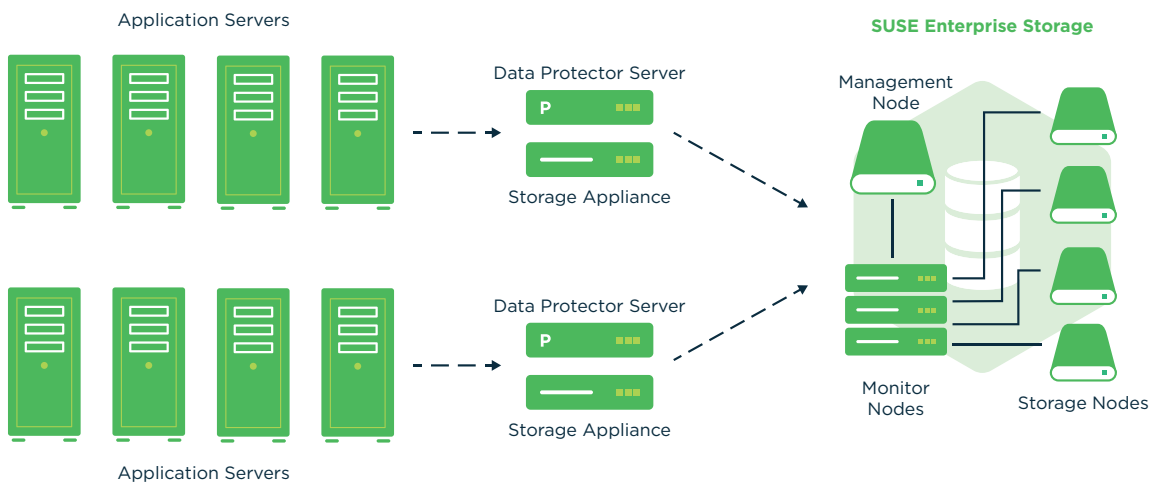


Figure 3. In this image, Data Protector works with a storage appliance and backs it up to SUSE Enterprise Storage or uses SUSE Enterprise Storage as additional capacity if the appliance is full. A remote office scenario in which every office hosts its own storage appliance but the SUSE Enterprise Storage cluster is offsite might look like this.

Storage That Works for All Your Locations

Whether you're a retail organization with a hundred outlets or an enterprise with a large secondary location, you need a way to provide storage, backup and disaster recovery for the data

from all your locations. Together, SUSE and Micro Focus can help you do just that, with cost-effective and infinitely scalable storage that can meet compliance challenges, support remote locations and leave you free to grow.

Additional contact information and office locations:
www.suse.com

www.suse.com

